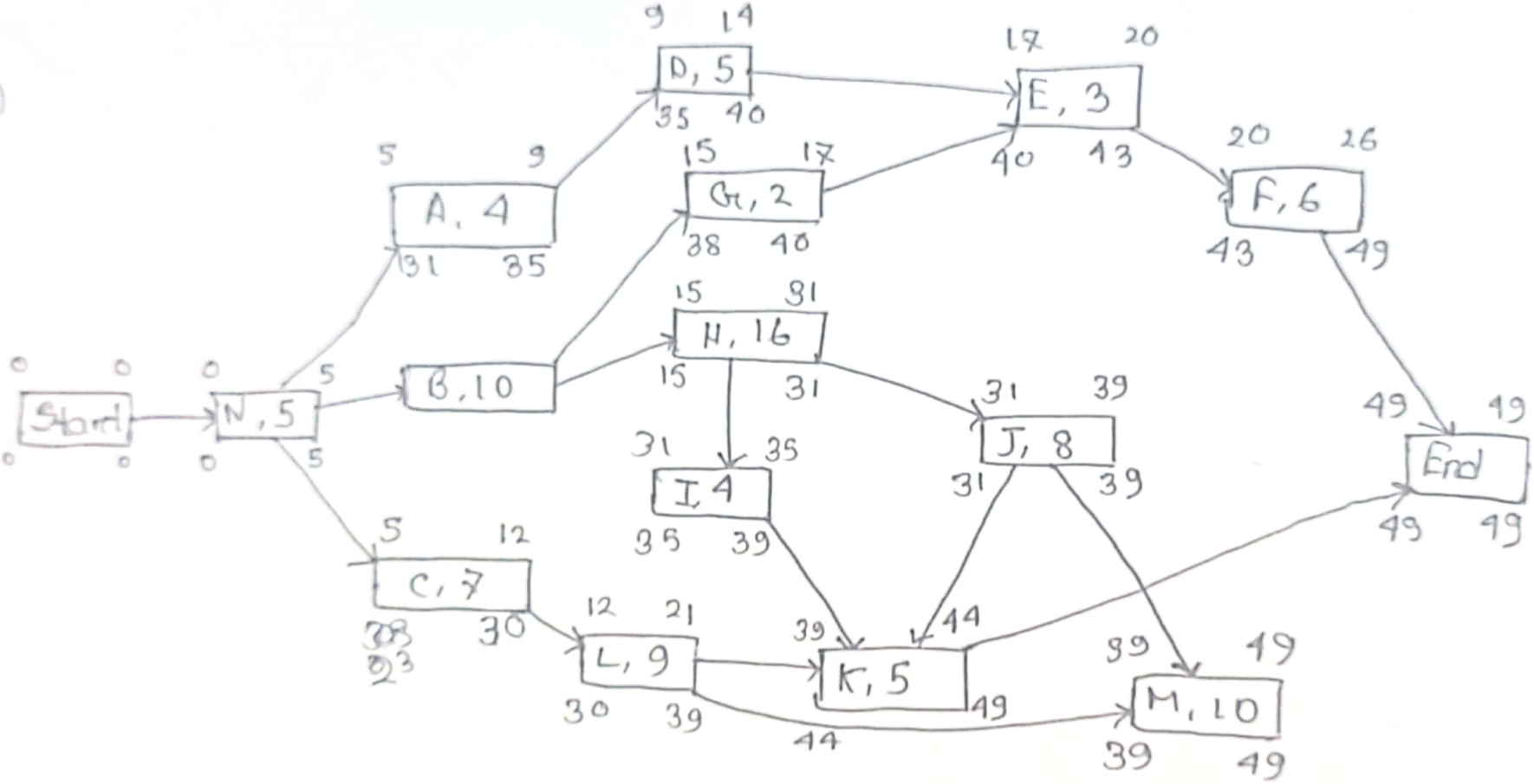
a)



∴ Critical Path: N → B → H → J → M

& Project completion time: 49 weeks

b)

Activity	ES	EF	LS	LF	Slack (LF - EF)
N	0	5	0	5	0
A	5	9	31	35	26
B	5	15	5	15	0
C	5	12	23	30	18
D	9	14	35	40	26
E	17	20	40	43	23
F	20	26	43	49	23
G	15	17	38	40	23
H	15	31	15	31	0
I	31	35	40	44	9
J	31	39	31	39	0
K	39	44	39	44	0
L	12	21	30	39	18
M	39	49	39	49	0

c) Yes, activity I can be delayed without delaying the project completion time.

activity I is non-critical and has slack = 9 weeks.

& Savings = 9 week × $2500 = $22500 (Ans)

d) Total delay = 2 + 5 = 7 weeks.

Activity F has slack = 23 weeks.

So, even a 7 week delay will not affect the project completion time.

e) Activity M is on the critical path and has slack = 0.

Increasing its duration by 6 weeks will increase total project duration.

∴ New completion time = 49 + 6 = 55 weeks. (Ans)